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GEMINATE IN CENTRAL SARAWANI BALOCHI

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Abstract

This article attempts to identify and analysis two different types of geminate, namely, single vowel-adjacent geminate and intervocalic geminate in Central Sarawani Balochi dialect. In addition, analyses of these geminate processes are given in the framework of Optimality theory (OT). We also represent the moraic model of syllable structure in this dialect to support the idea that geminate in Central Sarawani Balochi (CSB) is underlyingly moraic. The data have been extracted from the linguistic corpus collected through fieldwork in Sarawan city in Sistan and Baluchestan province of Iran. The research findings show that both single vowel-adjacent geminates and intervocalic geminates are common in CSB, whereas no initial geminates have been observed in the data under investigation. Moreover, almost all consonants can occur as geminate consonants in word-final position, while no glide and glottal consonants appear as geminate consonants in this position. Likewise, geminate in CSB supports the idea that there is no super-heavy syllable in this dialect, since gemination only occurs after short vowels.

Keywords

optimality theory, moraic theory, constraints, intervocalic geminate, single vowel-adjacent geminate

LAS GEMINADAS EN DIALECTO SARAWANI BALOCHI CENTRAL

Resumen

Este artículo intenta identificar y analizar dos tipos diferentes de geminada, es decir, la geminada vocal adyacente única y la geminada intervocálica en el dialecto Sarawani balochi central. Adicionalmente, se analizan los procesos de geminación en el marco de la Teoría de la Optimidad (OT). Se representa también el modelo moraico de estructura silábica en este dialecto para apoyar la idea de que las geminadas en el Sarawani Balochi Central (SBC) son subyacentemente moraicas. Los datos se han extraído de un corpus lingüístico recogido a través de trabajo de campo en la ciudad de Sarawan en Sistan y en la provincia Baluchistán en Irán. Los resultados de la investigación muestran que la geminada vocal adyacente única y la geminada intervocálica son comunes en el dialecto SBC, mientras que no se han encontrado geminadas iniciales en los datos investigados. Por otra parte, casi todas las consonantes pueden ocurrir como consonantes geminadas en posición final de palabra, mientras que no aparecen glides ni consonantes glotales como geminadas en esta posición. Del mismo modo, las geminadas en dialecto SBC confirma la idea de que no hay ninguna sílaba súper pesada en este dialecto, ya que la geminación se produce sólo después de vocales breves.

Keywords
teoría de la optimidad, teoría moraica, limitaciones, geminada intervocálica, geminada vocal adyacente única

1. Introduction

Geminate normally refers to a long consonant that contrasts phonemically with its shorter or “singleton” counterpart (Davis 2011a). In Central Sarawani Balochi, the geminate consonant is not used contrastively. While, there are many examples of “true” geminates, which are underlyingly long, but in our data there is no “fake” geminates, which are derived through certain morphological processes, (for discussion of geminates see e.g. Rose 2000, Pajak forthcoming).

As data illustrate, geminates in CSB are mostly in word-final position, where they are preceded only by short vowels. However there are examples of intervocalic geminate, but no geminates in word-initial position as shown in (1) and (2) respectively.

(1) Word-final geminate consonants

a. *tʃæmm* ‘eye’

b. *mæll* ‘sand’

(2) Intervocalic geminate consonants

a. *tʃællæ* ‘ring’

b. *henna* ‘henna’

In the present article, the moraic representation of geminate will be shown. Moreover, our analysis of geminated data observed will be based on Optimality Theory (henceforth OT), a theory of constraint interactions in grammar (Prince & Smolensky 1993, McCarthy & Prince 1993a, b), to denote the distribution of geminate in CSB dialect. Further, the case of degeminated consonants in single-vowel-adjacent will be illustrated.

This article is organized as follows. In §2, we introduce the language background. In §3, we present the theoretical frameworks employed, that is, moraic theory and OT. In §4, we provide the analysis of geminates based on the theories applied. In §5, we represent the conclusion.

2. Language background

Balochi is spoken in south-western Pakistan, in the province of Baluchestan as well as by smaller populations in Punjab and Sindh, and by a large number of people in Karachi. It is also spoken in south-eastern Iran, in the province of Sistan and Baluchestan, and by Baloch who have settled in the north-eastern province of Khorasan and Golestan. It is, furthermore, spoken by small communities in Afghanistan, in the Gulf States, in the Marw/Marie region of Turkmenistan, in India, East Africa and nowadays also by a considerable number of Baloch in North America, Europe and Australia (Jahani & Korn 2009). The total number of speakers of Balochi has been estimated as being between 5-8 million but might also be somewhat higher than that (Jahani 2001: 59).

Jahani & Korn (2009: 636) divide the main dialects of Balochi into Western, Southern, and Eastern. They assert this a very broad dialect division, within which further dialect demarcations can be made. Some dialects do not easily fit any of these groups.

This is true, for example, of the dialect spoken in Iranian Sarawan, which shows transitional features between Western and Southern.

The dialect of Sarawani differs from the other Balochi dialects spoken in Iran. Sarawani is spoken in the area including the town of Sarawan. “The district of Sarawan is about 24,000 km^2. It borders with Pakistan to the east and with Chabahar district, which is situated along the Arabian Sea, to the southwest and south. In the north it borders the towns of Khash and Zahedan and in the west Iranshahr. The distance from Sarawan to Tehran is about 2,000 km^2” (Baranzehi 2003: 77).

3. Theoretical consideration

In mora theory (Hyman 1985; Hayes 1989), syllables are not divided into immediate constituents called onset and rhyme, but into “weight units” or moras**,** indeed only segments under the rhyme node may bear moras. In this approach, light syllables are monomoraic and heavy syllables are at least bimoraic.

The central idea of OT is that surface forms of language reflect resolutions of conflicts between competing demands or constraints. A surface form is “optimal” in the sense that it incurs the least serious violations of a set of violable constraints, ranked in a language-specific hierarchy. Constraints are universal and violable, and directly encode markedness statements and principles enforcing the presentation of constraints. A language differs in the ranking of constraints, giving priorities of some constraints over others. In fact, the optimal output form arises from competition of markedness and faithfulness constraints. Faithfulness constraints require that output be the same as their lexical input, in other words, faithfulness constraints oppose changes, while markedness constraints trigger changes (Prince & Smolensky 1993, McCarthy & Prince 1993, 1994). In addition, “faithfulness constraints state their requirements about input-output relations in terms of correspondence” (Kager 1999: 194).

Dialectologia **13** *(2014), 71-85.*
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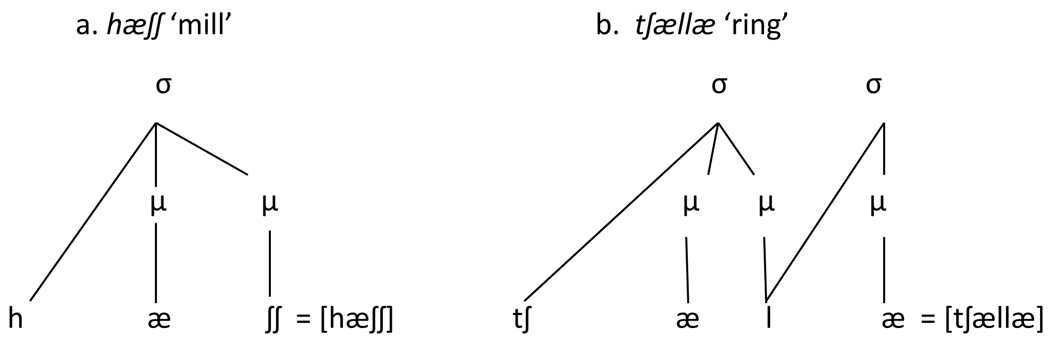
4. CSB data analysis

4.1 The moraic representation of geminate

"The moraic representation of geminate which is posited by Hayes (1989) is considered as the standard view of representation in current phonological works" (Davis 2011a: 874). On this view, geminates are represented as underlyingly moraic or heavy; a geminate consonant differs from a short consonant in that the former is underlyingly moraic while the latter is non-moraic.

In (3) the moraic representation of *hæʃʃ* 'mill' as final geminate and *tʃællæ* 'ring' as intervocalic geminate is shown.

(3) Moraic representation of geminate in CSB



As the data in (3) and also in (5)-(6) demonstrate, there is no geminate consonant preceded by a long vowel or a diphthong. Therefore, CSB geminate consonants only occur after short vowels. This fact supports the cross-linguistically common phenomenon called "avoiding trimoraic syllables" (Prince 1990).

Furthermore, CSB is an example of nucleus-weight languages, so the distinction between heavy and light syllables (i.e. those which attract stress as opposed to those which do not) is simply a matter of the number of segments in the nucleus: branching nuclei are heavy whereas non-branching nuclei are light (Hayes 1995). As a result, the CVC syllables serve as light syllables and only in certain contexts they surface as heavy (bimoraic). Context dependent weight is a phenomenon noted by researchers as Kager (1989), Hayes (1994), etc., (Davis 2011b).

In CSB context dependent weight of CVC syllables occur in its stress system whereby a CVV syllable in a word receives the stress, but if a word has no CVV syllables, a CVC syllable receives the stress, instead (Soohani, Ahangar & van Oostendorp 2011). As the following examples show:

(4) Central Sarawani Balochi stress pattern

a. *biːbíː*	'grandmother'
b. *pæ.sán*	'sheep (plural form)'
c. *máː.ton*	'my mother'
d. *pe.tón*	'my father'
e. *kóh.næ*	'old'
f. *hén.na*	'henna'
g. *péʃ.ʃok*	'cat'
h. *tʃǽm.man*	'eyes'

The generalization illustrated by the stress patterns in (4) is that stress falls on the right most heavy syllable. While a CVV syllable is always bimoraic, a CVC syllable can be heavy only in a word without long vowels like in (4b-4d-4e) or in the case of geminate like in (4f-4g-4h). Concerning the data in (4), the items in (4a-4c) show that in words containing long vowels, primary stress goes on the rightmost long vowel; (4b-4d-4e) indicate that if the word has no long vowels then the primary stress goes on the rightmost heavy syllable. The word-initial CVC syllables in (4f-4g-4h) pattern as moraic, since they contain geminate consonants, so they attract the primary stress.

4.2 Central Sarawani Balochi geminates in OT

In CSB Geminate consonants mostly occur in word-final position; though there are a number of intervocalic geminate consonants, no word-initial geminate consonants have been observed in CSB data. In addition, all segments, except for glides /j, w/ and / glottals /h, ʔ/, can appear as geminate consonants as illustrated in (5) and (6).

(5) Word-final geminate consonants

(I). Sonorants

a. *tʃæmm* 'eye'

b. *ʃærr* 'good'

c. *wæll* 'kind of melon'

d. *bell* 'allow'

e. *ɖenn* 'hill'

f. *tʃæll* 'fade'

(II). Obstruents

a. gæ*bb* 'bracelet'

b. *kipp* 'tight'

c. *sædd* 'dam'

d. *loʈʈ* 'wood'

e. *bæɖɖ* 'hug'

f. *bægg* 'cattle'

g. *pækk* 'kiss'

h. *næzz* 'squat'

i. *hæʃ* 'mill'

j. *gæʒʒ* 'swallow'

k. *toss* 'fart'

l. *letʃtʃ* 'mud'

m. *gædʒdʒ* 'spit'

(6) Intervocalic geminate consonants

(I). Sonorants:

a. *pællink* 'pigtail'

b. *bællok* ‘ancestor’

c. *wællok* ‘grandmother’

d. *tʃællæ* ‘ring’’

e. *henna* ‘henna’

f. *dʒænnæt* ‘heaven’

g. *gællæ* ‘wheat’

(II). Obstruents

a. *wæssu* ‘mother-in-law’

b. *peʃʃok* ‘cat’

c .*dʒækkæg* ‘cough’

d. *hekkok* ‘hiccup’

e. *kossi* ‘wrestling’

f. *tuppɑ̃n* ‘storm’

g. *koɖɖæl* ‘aviary’

h. *gætʃtʃæl* ‘bedridden’

The table in (7) summarizes the distribution of geminates in CSB. While single vowel-adjacent geminate including final geminates and intervocalic geminates are permitted, however; non-vowel-adjacent geminate and initial geminates are disallowed.

(7) Distribution of geminates in CSB

<table>
<tr><td>intervocalic geminate</td><td>VGGV</td><td rowspan="2">allowed</td></tr>
<tr><td rowspan="3">single vowel-adjacent geminates</td><td>VGG#</td></tr>
<tr><td>CGGV</td><td rowspan="3">not allowed</td></tr>
<tr><td>#GGV</td></tr>
<tr><td>non-vowel-adjacent geminates</td><td>#G+GC</td></tr>
</table>

In Optimality theory, the constraint which used against geminates is *GEM (Rose 2000). *GEM is considered as a family of constraints that target segmental type of gemintaes, as illustrates in (8). The main idea of *GEM is that geminate obstruents typologically are more common than geminate sonorant at least in the intervocalic environment (Pajak forthcoming).

(8) *GEMGLIDE >> *GEMLIQUID >> *GEMNASAL >>*GEMOBS

(Kawahara 2007)

Typological evidence shows that geminates in intervocalic position are most usual than geminates in not adjacent to any vowel (Muller 2001). This typological fact correlates with perceptual evidence, whereas intervocalic singleton-geminate contrast are the most perceptible, non-vowel-adjacent singleton-geminate contrasts are the least perceptible (Pajak forthcoming).

As table (7) illustrates, vowel adjacency is an important property to define common geminate contexts in CSB. This property can be shown in the framework of OT by the *GEM as a family of constraints that targets geminate in different contexts. Pajak (Forthcoming) gives informal definitions of contextual constraints on geminates as follows:

(9) *GEM / V_ V

Geminates flanked by vowels are not allowed.

("No intervocalic geminates")

(10) *GEM / 1VA

Geminates adjacent to exactly one vowel are not allowed.

("No single vowel-adjacent (1VA) geminates")

(11) *GEM / NVA

Geminates not adjacent to any vowel are not allowed.

("No non-vowel-adjacent (NVA) geminates")

The universal ranking of contextual constraints on geminates is as follows (Pajak forthcoming):

(12) *GEM / NVA >> *GEM /1VA >> *GEM / V_ V

Correspondingly, the constraint against non-vowel-adjacent geminates is ranked the highest, while the constraint against intervocalic geminates is ranked the lowest.

As to the CSB data such as (5) and (6), they follow the universal ranking constraints on geminates (12), where no initial geminate has been observed, while intervocalic and word-final geminates are allowed. Moreover; additional constraints necessary for the analysis of geminates in CSB are highlighted as:

(13) MAX-IO

Input segments must have output correspondents. (“No deletion, no degemination”.)

(14) DEP-IO

Output segments must have input segment correspondents. (“No epentheses”.)

(15) OCP

At the melodic level, adjacent identical elements are prohibited

The full OT analysis of intervocalic geminates and single-vowel-adjacent geminates (word-final geminates) in CSB are provided as what follows. In Tableau (17), the candidate with an intervocalic geminate (a) surfaces as optimal because other candidates are eliminated by higher-ranked constraints. The degeminated candidate (b) violates MAX-IO, and the candidate with epenthesis (c) violates DEP-IO. Therefore, the constraints DEP-IO and MAX-IO must dominate No GEM / V_V.

(16) MAX-IO, DEP-IO >> OCP, *GEM/ V_V

Dialectologia **13** (2014), 71-85.
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Tableau (17): Intervocalic geminates

/tʃællæ/	MAX-IO	DEP-IO	OCP	*GEM/V_V
a. ☞ tʃællæ			*!	*
b. tʃælæ	*!			
c. tʃælælæ		*!		

The tableau (19) shows single-vowel-adjacent geminates (word-final geminates) in CSB. The word-final geminate candidate (a) wins because the degimanted candidates (b) and (c) violate the higher-ranked constraints MAX-IO and DEP-IO respectively.

(18) MAX-IO, DEP-IO >> OCP, *GEM/1VA

Tableau (19): single-vowel-adjacent geminates

/hæʃʃ/	MAX-IO	DEP-IO	OCP	*GEM/1VA
a. ☞ hæʃʃ			*!	*
b. hæʃ	*!			
c. hæʃeʃ		*!		

As examples in (5) and (6) demonstrate, glottal segments and glides are not found as consonant geminate in word-final position. It is well known that guttural consonants (pharyngeals, laryngeals, uvulars) resist geminating in some Semitic languages (McCarthy 1994). It seems to be true for CSB with range of glottal consonants [h, ʔ], as a subgroup of gutturals. Moreover; based on ranking in (7), geminate glides are more marked than geminate obstruents.

To account for a form like *dɪh* 'beast', a constraint preventing glottal geminate, *GEMGUTT, is necessary in addition to the OCP, as well as familiar faithfulness constraints within correspondence theory such as MAXIO and DEP-IO. Hence, the following ranking against guttural geminate is demonstrated in Tableau (19).

(18) * GEMGUTT >> DEP-IO >> MAX- IO, OCP

Tableau (20): degemianted glottal consonants in word-final position

/dɪh/	* GEMGUTT	DEP-IO	MAX- IO	OCP
a. ☞ dɪh				
b. dɪhh	*!	*		*
c. dɪ			*!	
d. dɪhɪ		*!		

Thus as it is shown in Tableau (19), candidate (a) is an optimal output, since it does not violate any constraints, whereas for example, candidate (b) violates anti-geminate constraint and both candidates (c) and (d) violate MAX-IO and DEP-IO respectively.

Furthermore, in the case of degeminated glide consonants, the anti-geminate constraints *GEMGLIDE which prevents glide consonant geminate is high ranked. Tableau (21) evaluates candidates for an input *tæw* 'you'. In this tableau, the optimal output is candidate (a) which is degeminated and in fact does not violate any ranked constraints.

(20) * GEMGLIDE >> DEP-IO >> MAX- IO, OCP

Tableau (21): degemianted glide consonants in word-final position

/tæw/	* GEMGLIDE	DEP-IO	MAX- IO	OCP
a. ☞ tæw				
b. tæww	*!	*		*
c. tæ			*!	
d. tæwæ		*!		

The summary of the constraint ranking that accounts for the distribution of geminates in CSB is provided in (22). The intervocalic geminates and single-vowel-adjacent geminates are allowed due to the low-ranked constraint *GEM/V_V and *GEM/1VA respectively. The glide and glottal consonants undergo degemination, which are assured by ranking *GEMGUTT and *GEMGLIDE above faithfulness constraints and OCP constraint.

(23) Constraint ranking responsible for the distribution of geminates in Sarawani Baloch

Intervocalic geminates	VGGV	MAX-IO, DEP-IO >> OCP, *GEM/ V_V
Single vowel-adjacent geminates	VGG#	MAX-IO, DEP-IO >> OCP, *GEM/1VA
Word-final glide consonants geminate	disallowed	* GEMGLIDE >> DEP-IO >> MAX- IO, OCP
Word-final glottal consonants geminate	disallowed	* GEMGUTT >> DEP-IO >> MAX- IO, OCP

5. Conclusion

As illustrated, moraic representation of geminates in CSB shows that geminate consonants are underlyingly moraic and the fact that word-final position geminates only occur after short vowels support this idea that there is no superheavy syllable, at least as we have observed in our data, in CSB. Besides, in CSB as nucleus-weight language, CVV is as heavy syllable, whereas the CVC syllable is as light syllable. The weight of a CVC syllable is based on its context within a word. Moreover; the OT analysis for the geminate process given in this study covered almost all possible gemination cases in Central Sarawani Balochi. We argued that intervocalic and single vowel-adjacent geminates are allowed as in (17, 19) whereas, initial geminate is disallowed.

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